

Remarks

Claims 1, 2, 4, 6-12, 18, 20, 22-28, and 34-41 are currently pending in the above-captioned matter. By this amendment, claim 2 has been cancelled without prejudice. Claims 1, 9, 10, 18, 25, 26, 34 and 35 have been amended. Support for the amendments is found in the specification at page 8, last paragraph and in Example 5. After entry of this amendment, claims 1, 4, 6-12, 18, 20, 22-28, and 34-41 are pending. Remarks made herein are based on the claims as amended hereby.

The indication of allowability of claims 11, 27, 34 and 37 is respectfully acknowledged. Claim 11 has been rewritten in independent form including all of the limitations of the base claim and allowance is requested.

Claim Objections

Claims 9-10, 25-26 and 34 were objected to under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the preceding claims from which they depend. Each of the objected to claims has been amended thereby obviating the objection.

35 U.S.C. §103 Rejections

Claims 1-2, 4, 6-7, 12, 18, 20, 22-23, 28, 35, and 38-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Jones U.S. 3,836,467 A ("the '467 patent"). This rejection is hereby traversed.

According to *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966), the analysis of obviousness requires determining the scope and content of the prior art, the differences between the prior art and the claims at issue, and the level of ordinary skill in the art, as well as a weighing of secondary considerations.

MPEP § 2143 states the basic requirements for a prima facie case of obviousness under §103(a) as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met.

First, there must be some *suggestion or motivation*, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, *the prior art reference (or references when combined) must teach or suggest all the claim limitations*. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." (emphasis added)

Applicant submits that considering the *Graham* factors in applying the test of MPEP § 2143, the Examiner has failed to establish a *prima facie* case of obviousness of claims 1-2, 4, 6-7, 12, 18, 20, 22-23, 28, 35, and 38-41 under 35 U.S.C. § 103(a).

Jones is directed to a cold forming lubricant that requires the presence of

- 1) 3-80 wt% alkali metal orthophosphate,
 - 2) 20-97 wt% alkali metal fatty acid soap, and
 - 3) 0.1 to 25wt% solid anionic surfactant, Jones, col. 2, lines 41-50, col. 3, lines 62-63.
- According to Jones, this formula may be modified by adding any or all of a long list of optional ingredients, which may or may not be water soluble, and may or may not be inorganic, Jones, col. 3, line 74-75 and col. 4, lines 7-8. These additions also may be made with or without reducing the amount of orthophosphate, Jones, col. 3, line 70-73.

Optional ingredients include a list of fifty-two (52) possible additives including some generic identifiers such as "corrosion inhibitors", "dyes" and "perfumes" that cover multiple possible compositions. The amount for most of these optional ingredients is in the broad range of from 0.1 to 80 wt% of the composition.

The "lubricant" of Jones could be almost any lubricant composition based on the above teachings and Jones's laundry list of fifty-two optional ingredients. This general recitation of what *could* be put in a lubricant coating does not provide the requisite teaching, suggestion or motivation of what *should* be put in a lubricant coating that would lead one of ordinary skill in the art to make the combination that is Applicants'

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claimed composition.

Jones does not recognize the problems associated with using chemical conversion coatings under lubricant. In fact, the Jones composition is applied on top of a chemical conversion coating, see col. 5, line 36-47. This is an old method of making a forming lubricant rejected by Applicants, see Specification, page 2, line 21-page 3, line 14. In contrast, Applicants' compositions are applied and adhere to uncoated metal surfaces, see Specification, page 13, lines 10-20.

Also, Jones does not disclose alkali silicates represented by the formula $M_2O \cdot nSiO_2$ [where n represents a number of 2 to 9, and M represents at least one of Na, K, Li, and NR_4 (where R independently represents a hydrogen atom or an alkyl group)] as recited in the independent claims. Applicants' Examples show that this "n" number affects performance of the coating, see Comparative Example 1 where the Following Property and Rust Preventative Property are poorer where "n" = 1.

Given these differences, and the lack of recognition of any problem with using a conversion coating/lubricant combination or just any alkali metal silicate, there is no teaching, suggestion or motivation to modify Jones as suggested by the Examiner. Applicants respectfully submit that the inventions claimed in independent claims 1, 18, and 35, and the claims depending therefrom are not rendered obvious by the generalized teachings about "lubricant" found in Jones.

The rejection of claims 1-2, 4, 6-7, 12, 18, 20, 22-23, 28, 35, and 38-41 as unpatentable over Jones should be withdrawn.

Claims 1-2, 4, 12, 18, 20, and 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Jeanneret U.S. 3,735,797 A ("the '797 patent"). This rejection is hereby traversed.

Jeanneret is directed to a protective coating for equipment through which molten ferrous metal flows, whose desirable features are being refractory and heat-insulating, Jeanneret, col. 2, line 2. One of ordinary skill in the art seeking a composition for cold forming would not be motivated to look to the Jeanneret reference where in cold

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forming the coated surface changes shape and in Jeanneret the coated equipment does not.

First, in cold forming, heat is generated locally at points of high deformation of metal, and cold forming lubricants are selected to transfer that heat away from the workpiece and die rather than insulate the heat. This feature is the opposite of the heat insulating features of the protective coating of Jeanne rat that seeks to keep the flowing metal hot, Jeanneret, col. 1, lines 42-48, and col. 1, lines 66-col. 2, line 2.

Second, an important feature of a cold forming lubricant is its ability to follow the metal being formed as it changes shape. The coating must have sufficient cohesion to stretch to follow the metal so that the lubricant film remains substantially continuous, as well as good adhesion to the metal workpiece that is being subjected to high shear. This is not a requirement of the composition of Jeanneret where the coated equipment does not change shape. One of skill in the art would not look to Jeanneret for teachings to make a coating for cold forming.

Even if one were to try to use Jeanneret to make a cold forming lubricant, one would not achieve the invention of independent claims 1 and 18, and the claims depending therefrom. Independent claim 1 recites 5-85 mass% of a lubricating component. Independent claim 18 recites lubricating component in amounts of 5 to 50 mass%. The Examiner admitted that Jeanneret teaches soap as optional in amounts of 0 to 2%, Official Action mailed March 11, 2009, page 6, paragraph 1. The claimed ranges do not overlap those of the reference. There is no teaching or suggestion to increase the amount of lubricant component in Jeanneret to the level of the independent claims and then to select the other particular features of the independent claims from the broad teachings of Jeanneret. The rejection of claims 1-2, 4, 12, 18, 20, and 28 as unpatentable over Jeanneret should be withdrawn.

Claims 1-2, 4, 6-10, 12, 18, 20, 22-26, 28, 35-36, and 38-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nose et al U.S. 4,130,440 A ("the '440 patent"). This rejection is hereby traversed.

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Nose is directed to a coating composition that must be used within 1-2 hours of mixing, Nose, col. 6, lines 17-18. The composition is kept as two separate components which can only be combined shortly before use because the resulting mixture reacts internally and has a pot life of only 60 to 120 minutes. Unlike Nose, Applicants' coating time is not particularly critical, see specification, page 11, 6-8. A particular focus of this reference is the increased pot life obtained by use of 30 to 300% of a hardener, as compared to the alkali silicate amount, but there is no teaching regarding the amount of alkali silicate other than in the examples. The examples of Nose recite alkali silicate, solids amounts, for coatings only as high as 13% of the composition, see Nose et al. Examples 1-4 (10%), Example 5-6 (13%), Example 7 (6%), Example 9 (7%), Example 10 (11%) and Examples 11 (12%). One of ordinary skill would not be guided by Nose to select alkali silicate amounts as claimed in the independent claims. One of ordinary skill in the art reading this reference as a whole would not be motivated to modify Nose in a manner so as to achieve the claimed invention where the amount of alkali silicate is outside the claimed range and the combination of components in addition to the alkali silicate is not presented in combination or suggested in the particular combinations as claimed by Applicant. The rejection of claims 1-2, 4, 6-10, 12, 18, 20, 22-26, 28, 35-36, and 38-41 as unpatentable over Nose should be withdrawn.

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Conclusion

Applicants request reconsideration in view of the amendments and remarks contained herein. Applicants submit that the claims are in condition for allowance and a notice to that effect is respectfully requested. Should the Examiner have any questions regarding this paper, please contact the undersigned.

Respectfully submitted,

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